MINICHEF™ 2000

Fast Start Guide

For All Applications

WATLOW

CE 97

TOTAL CUSTOMER SATISFACTION

ISO 9001

Registered Company
Winona, Minnesota USA

Watlow Controls
1241 Bundy Blvd.
P.O. Box 5580
Winona, Minnesota U.S.A. 55987-5580
(507) 454-5300, Fax (507) 452-4507

WMC2-XFSN-0008
June 1997
(1116)

Made in the U.S.A.

Introduction

Welcome to the MiniChef 2000™

The MiniChef 2000 is a configurable, time/temperature and machine function controller that is preprogrammed for dozens of cooking applications. Its compact size and optional horizontal/vertical orientation facilitates streamlined equipment design. It withstands rigorous application environment conditions, with an 80ºC ambient rating and superior EMI/RFI immunity. It is also backed by Watlow's exclusive three-year warranty.

Each unit is equipped to offer:

- two temperature sensor inputs
- two event inputs (for machine control)
- two heat control outputs
- two event outputs (for machine control)
- one audible alarm output

(See diagram below.)

Depending on the application software you select, some or all of the inputs or outputs are used. See the Application Selection Table that follows.

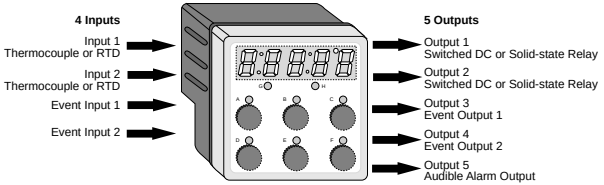


Figure 2 — Inputs and outputs.

See panel 23 for information about ordering *The Complete MiniChef 2000 User Manual*.

MINICHEF™ 2000 Application Software Selection Table

To select the application software that best suits your equipment and purpose, first locate the type of equipment in the left column, then check the other columns for features and options you need. The application number is on the right (Appl#). Make a note of the application number. You will be using this number later when programming your controller. The guide for each application contains specific configuration and programming parameters, and operating instructions. Note that the use of the software below is not limited to the equipment types listed in the first column.

Intended Equipment Type (May also apply to other apps)	Operation Mode	No. of Menus	Heat Output Channels	Timed Zones	Meat Probe	Fan Speeds	Steps	Appl #	Notes
COOK & HOLD OVENS									
	Auto	6	Single	1	Yes	1 or 2	2	**1**	
	Auto	17	Single	1	Yes	1 or 2	2	**2**	
	Auto	6	Single	1	No	1 or 2	2	**3**	
	Auto	20	Single	1	No	1 or 2	2	**4**	
	Manual	N/A	Single	1	Yes	No	1 or 2	**5**	
	Manual	N/A	Single	1	No	No	1 or 2	**6**	
CONVECTION OVENS									
	Auto	6	Single	1	No	1 or 2	4	**7**	
	Auto	15	Single	1	No	1 or 2	4	**8**	
	Manual	N/A	Single	1	No	1 or 2	1 or 2	**9**	
DEEPFAT FRYERS									
	Auto	4	Single	1	No	No	1	**10**	
	Auto	40	Single	1	No	No	1	**11**	
	Manual	N/A	Single	1	No	No	1	**12**	
Pressurized	Auto	6	Single	1	No	No	1	**13**	
Pressurized	Auto	40	Single	1	No	No	1	**14**	
Pressurized	Manual	N/A	Single	1	No	No	1	**15**	
	Auto	6	Single	1	No	No	1	**16**	
	Auto	2/4	Single	2	No	No	1	**17**	
	Auto	40	Single	1	No	No	1	**18**	
	Manual	N/A	Single	1	No	No	1	**19**	
GRIDDLES									
Clam Shell	Auto	6	Dual	1	No	No	1	**20**	
Clam Shell	Manual	N/A	Dual	1	No	No	1	**21**	
One-sided	Auto	6	Single	1	No	No	1	**22**	
One-sided	Manual	N/A	Single	1	No	No	1	**23**	
TIMERS									
No temp. control	Auto	6	N/A	6	No	No	1	**24**	
No temp. control	Manual	N/A	N/A	1	No	No	1	**25**	
SHELF TIMER	Auto	6	Single	6	No	No	1	**26**	
ROTISSERIE OVENS									
	Manual & Auto	30	Single	1	Yes	Yes (1)	1 or 2	**27**	
	Manual	N/A	Single	1	Yes	Yes (1)	1 or 2	**28**	

Table 3 — Application selection table.

Overview of Key Steps, from Installation through Operation:

1 Install the controller

- Use the panel knock-out pattern guidelines in this guide.

2 Wire the controller

- Use the connector/wiring information in this guide.

3 Configure the controller

- After applying power, use the Configuration Mode to enter the equipment Application Number (from the MINICHEF 2000 Software Selection table), set up the controller and access the thermal optimization functions.
- Set the Application Number Security Lock, if necessary, to prohibit end users from changing Application Number.
- To speed configuration, you may want to use the Prototyping/Training Overlay (available separately, see Ordering Information on panel 23).

Note: Always select and enter the application number first. The parameters that follow are based on it. See instructions in the *Hardware & Software Setup Guide*.

4 Program the menus (automatic menu applications only)

- Use the Program Mode to program automatic menus for the chosen application.
- To ease menu programming, you may want to use the Prototyping/Training Overlay (available separately, see Ordering Information on panel 23).

5 Set menu security (automatic menu applications only)

- Set up menu security, if necessary, to prohibit end users from changing values. (Because the controller defaults to no security, the end user may be able to access the Program Mode to change parameter values based on menu.)

6 Set Real-time Clock

This applies only to controllers purchased with the Real-time Clock option. It allows you to see the time of day instead of "idle" on the display.

7 Design faceplate overlay

- Use the Overlay Design Guidelines in this guide to design, manufacture and apply a membrane overlay for the controller faceplate. This custom-designed overlay becomes the end-user interface.
- For overlay designs to suit specific applications, see the suggestions in each application guide.

8 Operate the MINICHEF 2000

- Use the Operation Mode to run the installed controller. This is the default mode. Operation instructions are included in each application guide (available separately, see ordering information on back page).

General Description

Getting to know your MINICHEF™ 2000

Front view

Back view

Shown with mating connector terminals installed. Mating connectors and terminals are purchased separately.

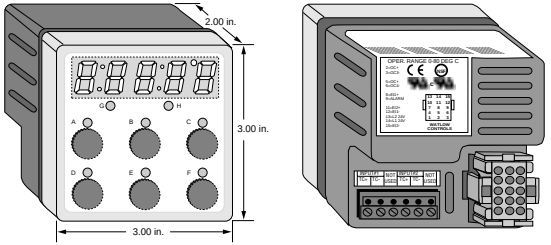


Figure 5a — Front and back view.

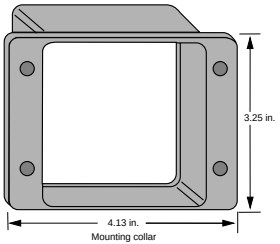


Figure 5b — Mounting collar.

Dimensions:

Overall width x height x depth (Includes MINICHEF 2000 with mounting collar and space required for mating connectors. Does not include wire bundle space requirements):

4.13 in x 3.25 in x 2.00 in (with collar mounted in horizontal position)
3.25 in x 4.13 in x 2.00 in (with collar mounted in vertical position)

Step 1 Install the Controller

- Select sheet metal (16-, 18-, 20- or 22- gauge panel).
- For panel knock-out patterns, see subsequent pages of this guide.
- Use #6-32 mounting studs x 0.50" length minimum, either pressed or welded.
- Install the unit with either a horizontal or vertical mounting collar position.
- Install mating connectors to unit.

Note: This device should be used in systems that incorporate a separate high limit device for safety.

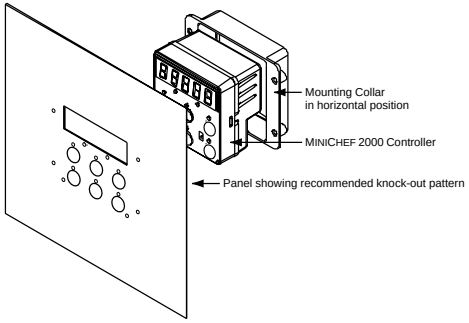


Figure 6 — Mounting the MINICHEF 2000.

Panel Knock-out Pattern for a Mounting Collar in a Horizontal Position

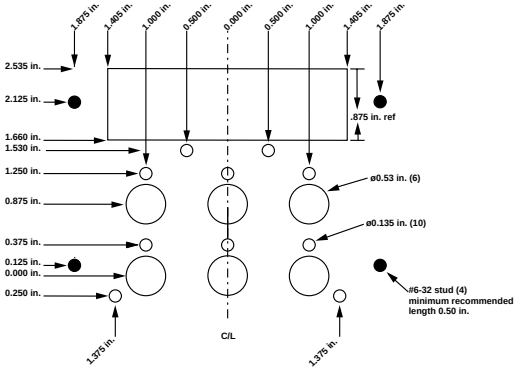


Figure 7a — Pattern for horizontal panel 16- or 18-gauge thick.

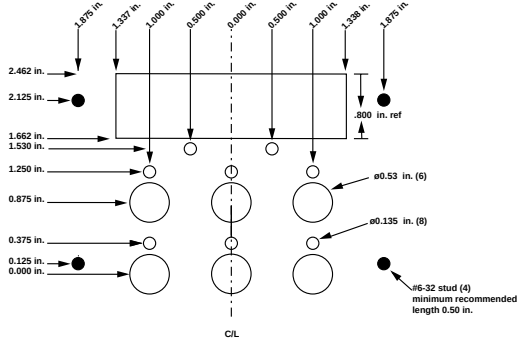


Figure 7b — Pattern for horizontal panel 20- or 22-gauge thick.

Panel Knock-out Pattern for a Mounting Collar in a Vertical Position

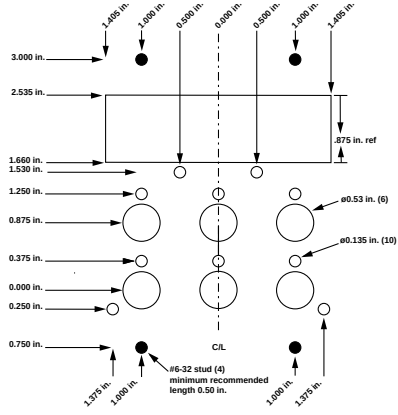


Figure 8 — Pattern for vertical panel 16- or 18-gauge thick.

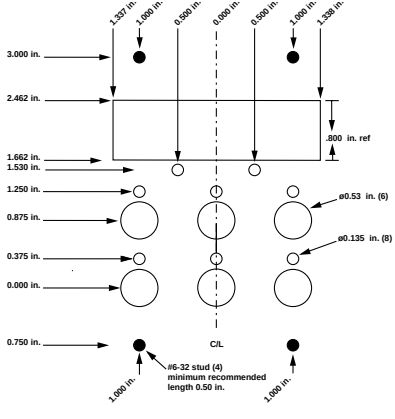


Figure 8 — Pattern for vertical panel 20- or 22-gauge thick.

Step 2 Wire the Controller

Position the connector with the beveled edges at the top.

Not all software applications use or require wiring to all inputs and outputs. For specific information consult the guide for the application you are using.

Note: The following illustration is a view of the back of the controller, not of the mating connector.

Power Wiring

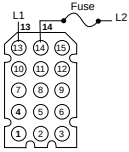
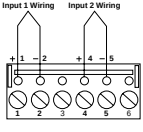


Figure 9a — 24V~ (ac) Low Voltage.

WARNING: To avoid potential electric shock, use National Electric Code (NEC) safety practices when wiring and connecting this unit to a power source and to electrical sensors of peripheral devices. Failure to do so could result in injury or death.

Sensor Inputs 1 and 2

Note: The following illustrations are views of the back of the mating connector, not of the controller.



F 2 _ _ – 1 _ _ _ - _ _ _ _ (Type J, K, or E).

Figure 9b — Dual Thermocouple Option.

Dual RTD Option (platinum)

F 2 _ _ – 2 _ _ _ – _ _ _ _ (100Ω RTD, curve selectable)
F 2 _ _ – 3 _ _ _ - _ _ _ _ (500Ω RTD, curve selectable)
F 2 _ _ – 4 _ _ _ - _ _ _ _ (1000Ω RTD, curve selectable)

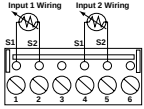


Figure 10a — 2-wire RTD.

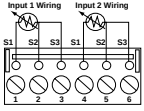
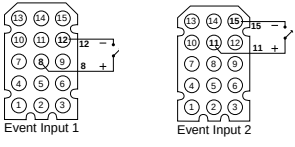


Figure 10b — 3-wire RTD: (will function as a 2-wire RTD).

Note: If your chosen software application does not require two sensor inputs, it is not necessary to wire Input 2. For specific information, consult the application guide for the application you are using.

Event Inputs 1 and 2

Note: The following illustration is a view of the back of the controller, not of the mating connector.



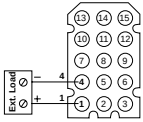
F 2 _ _ - _ _ _ _ - _ _ _ _

Figure 10c — Switched DC (two per unit, non-isolated).

Note: Not all software applications require event inputs 1 and 2. For specific information consult the application guide for the application you are using.

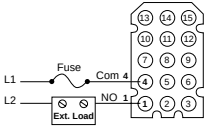
Output 1

Note: The following illustrations are views of the back of the controller, not of the mating connector.



F 2 _ _ – _ 1 _ _ – _ _ _ _

Figure 11a — Switched DC Option (5V nominal, 30mA, non-isolated).



Form A, 0.4A, with or without RC Suppression

F 2 _ _ – _ 2 _ _ – _ _ _ _ (without RC Suppression)

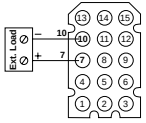
F 2 _ _ – _ 3 _ _ – _ _ _ _ (with RC Suppression)

Figure 11b — Solid-state Relay Option.

Note: Not all software applications require Output 1. For specific information consult the application guide for the application you are using.

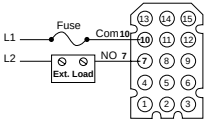
Output 2

Note: The following illustrations are views of the back of the controller, not of the mating connector.



F 2 _ _ - _ _ 1 _ – _ _ _ _

Figure 12a — Switched DC Option (5V nominal, 30mA, non-isolated).



Form A, 0.4A, with or without RC Suppression

F 2 _ _ - _ _ 2 _ - _ _ _ _ (without RC Suppression)

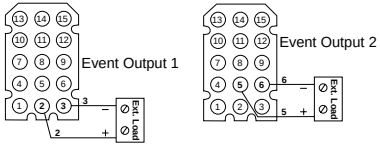
F 2 _ _ - _ _ 3 _ - _ _ _ _ (with RC Suppression)

Figure 12b — Solid-state Relay Option.

Note: Not all software applications require Output 2. For specific information consult the application guide for the application you are using.

Event Output 1 and Event Output 2

Note: The following illustrations are views of the back of the controller, not of the mating connector.



F 2 _ _ - _ _ _ 1 - _ _ _ _ (switched dc, 5V nominal, 30mA, non-isolated outputs)

Figure 13a — Event Outputs.

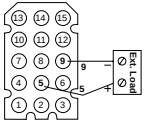
⚠

Warning: If event outputs 1 & 2 are used to cause or initiate machine motion, appropriate reasonable care should be taken to prevent personal injury or machine damage as a result of machine motion.

Note: Not all software applications require event outputs 1 & 2. For specific information consult the application guide for the application you are using.

Output 5: Audible Alarm Output Signal Option

Note: The following illustrations are views of the back of the controller, not of the mating connector.



Alarm signal available at connector, 5V nominal, 30ma, non-isolated.

F 2 _ _ - _ _ _ _ - _ 0 _ _ (unit without internal audible alarm)

Figure 13c — Switched DC.

Note: Pin 5 is shared with event output 2 wiring.

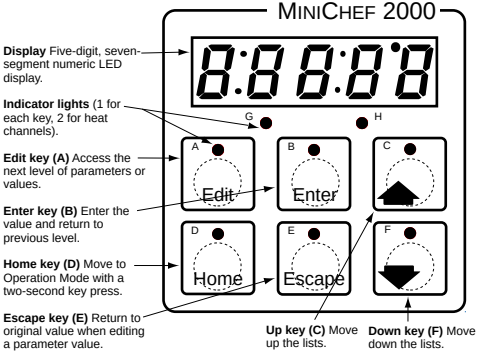
Step 3 Configure the Controller

Overview of Configuration

- Get to know the keys and how they function in different modes.
- Review configuration and programming procedures in this guide.
- Choose applications, functions, parameters and values (see Application Software Selection Table in this guide).
- Review the operating instructions (in each application guide).
- Get a complete idea of how the application works.

Controller Front Panel Layout

During configuration and programming, this is how the keys work:


MINICHEF 2000
Display Five-digit, seven-segment numeric LED display.
Indicator lights (1 for each key, 2 for heat channels).
Edit key (A) Access the next level of parameters or values.
Enter key (B) Enter the value and return to previous level.
Home key (D) Move to Operation Mode with a two-second key press.
Escape key (E) Return to original value when editing a parameter value.
G
H
A
B
C
Edit
Enter
D
E
F
Home
Escape
Up key (C) Move up the lists.
Down key (F) Move down the lists.

Note: To order this helpful Prototyping/Training Overlay, see Ordering Information on panel 23.

Note: In the Operation Mode, the keys will function differently, depending on the chosen application number. For more information, see individual application guides.

Software Structure

The MINICHEF 2000 software uses three modes — Configuration Mode, Programming Mode and Operation Mode — and each mode contains up to three levels of functions, parameters and values. The Operation Mode is the default mode.

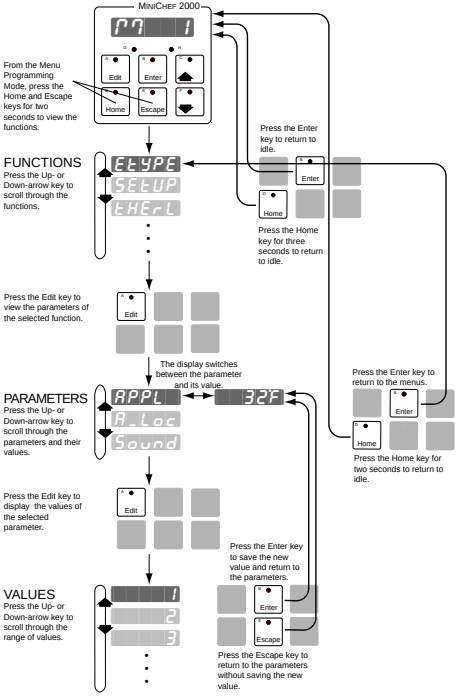

MINICHEF 2000
Edit
Enter
Home
Escape
From the Menu Programming Mode, press the Home and Escape keys for two seconds to view the functions.
FUNCTIONS
Press the Up- or Down-arrow key to scroll through the functions.
ETYPE
SETUP
THERL
Press the Enter key to return to idle.
Press the Home key for three seconds to return to idle.
Press the Edit key to view the parameters of the selected function.
The display switches between the parameter and its value.
PARAMETERS
Press the Up- or Down-arrow key to scroll through the parameters and their values.
APPL
32F
A_Loc
Sound
Press the Enter key to return to the menus.
Press the Home key for two seconds to return to idle.
Press the Edit key to display the values of the selected parameter.
Press the Enter key to save the new value and return to the parameters.
VALUES
Press the Up- or Down-arrow key to scroll through the range of values.
Press the Escape key to return to the parameters without saving the new value.

Figure 15 — Navigating in Configuraton Mode.

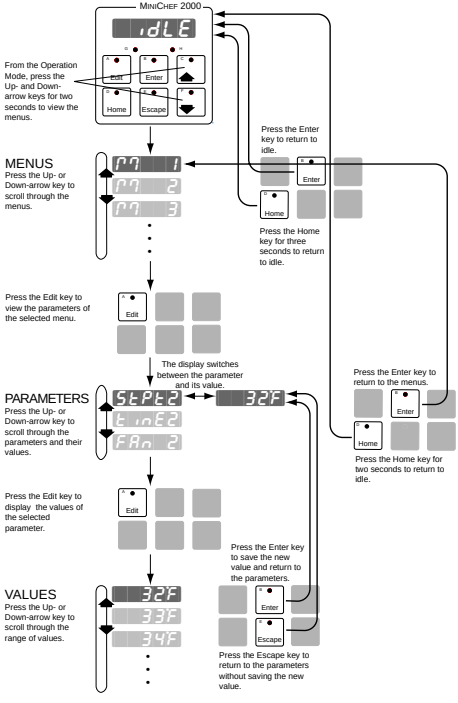

MiniChef 2000
idLE
Edit
Enter
Home
Escape
From the Operation Mode, press the Up- and Down-arrow keys for two seconds to view the menus.
MENUS
Press the Up- or Down-arrow key to scroll through the menus.
m1
m2
m3
Press the Enter key to return to idle.
Press the Home key for three seconds to return to idle.
Press the Edit key to view the parameters of the selected menu.
The display switches between the parameter and its value.
PARAMETERS
Press the Up- or Down-arrow key to scroll through the parameters and their values.
StPt2
32F
tmE2
FAn 2
Press the Enter key to return to the menus.
Press the Home key for two seconds to return to idle.
Press the Edit key to display the values of the selected parameter.
Press the Enter key to save the new value and return to the parameters.
VALUES
Press the Up- or Down-arrow key to scroll through the range of values.
32F
33F
34F
Press the Escape key to return to the parameters without saving the new value.

Figure 16 — Navigating in Menu Programming Mode.

NOTES

Watlow Controls

Watlow Controls is a division of Watlow Electric Mfg. Co., St. Louis, Missouri, a manufacturer of industrial electric heating products since 1922. Watlow begins with a full set of specifications and completes an industrial product that is manufactured totally in-house, in the U.S.A. Watlow products include electric heaters, sensors, controls and switching devices. The Winona operation has been designing solid state electronic control devices since 1962, and has earned the reputation as an excellent supplier to original equipment manufacturers. These OEMs depend upon Watlow Controls to provide compatibly engineered controls that they can incorporate into their products with confidence. Watlow Controls resides in a 100,000-square-foot marketing, engineering and manufacturing facility in Winona, Minnesota.

Technical Assistance

If you encounter a problem with your Watlow controller, refer to the Troubleshooting Chart in this guide. Also review all of your configuration information for each step of the setup to verify that your selections are consistent with your applications.

If the problem persists after checking all the steps, you can get technical assistance by calling Watlow Controls at (507) 454-5300, between 7 a.m. and 5 p.m. CST, and asking for an applications engineer. When you call have the following information on hand: the controller's part number, date code, serial number, software revision number, and application number. Much of this information is available on the controller case. All of this information is also available via the MINICHEF 2000 main display by accessing the WatHelp Diagnostics Function under in the Configuration Mode.

We Value Your Feedback

Your comments and suggestions on this manual are welcome. Please send them to, Technical Writer, Watlow Controls, 1241 Bundy Blvd., P.O. Box 5580, Winona, MN 55987-5580 or call (507) 454-5300 or fax (507) 452-4507.

Contact

- Phone: (507) 454-5300.
- Fax: (507) 452-4507.
- For technical support, ask for an Applications Engineer.
- To place an order, ask for Customer Service.
- To discuss a custom option, ask for the MINICHEF 2000 Product Manager.

Warranty

The MINICHEF 2000 is warranted to be free of defects in material and workmanship for 36 months after delivery to the first purchaser for use, providing that the unit has not been misapplied. Since Watlow has no control over its use, or misuse, we cannot guarantee against failure. Watlow's obligations hereunder, at Watlow's option, are limited to replacement or refund of purchase price of a unit which upon examination proves to be defective within the warranty period. This warranty does not apply to damage resulting from transportation, alteration, misuse, or abuse.

Returns

- Call or fax Customer Service for a Return Material Authorization (RMA) number before returning a control.
- Put the RMA number on the shipping label, and also on a description of the problem.
- 20% of net price restocking charge applies to all standard units returned to stock.

Note: All documentation of the MINICHEF 2000 is subject to change without notice.

Specifications (1032)

Control Mode
- Single and dual heat channels, PID or on/off.[1]
- Microprocessor-based, programmable, reverse-acting control outputs.
- User-selectable embedded application software defines operation of display, keys, inputs, outputs, timing action.
- One-step auto-tuning, WatHelp diagnostics, WatCurve temperature compensation.

Agency
- CE approved:
  - 89/336/EEC Electromagnetic Compatibility Directive
  - -EN 50081-1: Emissions
  - -EN 50082-1: Immunity
  - 73/23/EEC Low-Voltage Directive
  - -EN 60730-1 and EN 60730-2-9: Safety
- NSF Listed, Criteria 2.[5]
- AGA: UL tested to AGA standard Z21.23, UL File #E43684.
- UL and C-UL recognized, UL 197, 873, 991 and CSA standard C22.2-24, File # E43684.

Operator Interface
- Membrane overlay, contamination and water resistant, (supplied by customer).
- LED display, 5-digit, 0.56 in high, red.
- Displays times, temperatures, user prompts and diagnostic codes.
- User-selectable time and temperature display formats.
- Temperature display formats—˚F or ˚C.
- Time display formats—H:MM:SS, HH:MM, or MMM:SS.
- 8 discrete indicator LEDs, red.
- 6 tactile feedback keys.
- Menu-driven operation and manual modes available.
- WatHelp diagnostics.
- Real-time clock option displays time of day.

Accuracy
- Calibration accuracy and sensor conformity[2]: ± 2.0°F for Type J thermocouple and RTD, ± 0.35% of span for Type K and E thermocouples, ±1 LSD, 77°F ± 5°F ambient and rated line voltage of ±10%.
- Accuracy span: 1000°F (540°C) minimum.
- Temperature stability: ± 0.15˚F/˚F (0.15˚C/˚C) change in ambient typical.

Sensors/Inputs
- Contact inputs, TTL compatible with internal pull-up resistor, two available.
- Thermocouple,[3] software selectable Type J, K or E, 32 to 1200°F. (Dual-channel applications require at least one ungrounded thermocouple).
- RTD,[3] 2- or 3-wire, platinum, 100, 500, 1000Ω, at 0°C, software selectable DIN or JIS curves, 0 to 1200°F (3-wire will function as 2-wire).
- Input A/D resolution: 15 bit.

Output Options
- Solid-state relay, 0.4A, with or without contact suppression.
- Switched dc signal, 4.5V to 5.25V, 30mA maximum output, minimum load resistance > 150Ω, non-isolated.

Audible Output Options
- Switched dc signal, 4.5V to 5.25V, 30mA maximum output, minimum load resistance > 150Ω, non-isolated.
- Internal audible alarm, 75dB at 10 cm.

Connectors
- Sensor Input Terminal Strip[4]: RIACON, 6-position, quick-connect.
- Power Supply & Input/Output Terminal[4]: AMP, 15-position, quick-connect.

Power/Line Voltage
- 20.4 to 26.4V~ (ac), 47 to 63Hz.
- 15VA maximum.
- For CE applications, input power must be limited to 15W external to the control.
- Program retention upon power failure via non-volatile memory.
- Battery/real-time clock option: 6-year lithium battery, provides power backup upon power failure, operation resumption after power recovery, ability to display time of day.

Operating Environment
- 32 to 176°F (0 to 80°C), 0 to 90% RH, non-condensing.

Storage Temperature
- -40 to 176°F (-40 to 80°C).

Mechanical
- Case: polycarbonate Lexan with adjustable mounting collar (vertical or horizontal orientation), designed for mounting on 16-, 18-, 20- and 22-gauge panels.
- Internal panel mounting requires a specified panel cutout and four #6-32 studs or equivalent.
- Overall width x height x depth: horizontal - 4.13 in x 3.25 in x 2.00 in; vertical - 3.25 in x 4.13 in x 2.00 in (Assumes mating connectors are attached. Does not include wire bundle space requirements.).
- Vibration: 2g, 10 to 150Hz, applied in any one of three axes.
- Weight: 6.50oz maximum.

Program Storage
- All non-embedded user and factory programs are stored in non-volatile memory. Can be changed by reprogramming.

Sample/Update Rates
- 1 input: 4Hz.
- 2 inputs: 4Hz.
- PID: 1Hz.
- Control outputs: 100Hz.
- Display: 10Hz.

[1] The MINICHEF 2000 controller is to be used in systems with an external high temperature limiting device.

[2] Thermocouple lead resistance of 200Ω causes < 1°C error. RTD, 22 gauge wire will not contribute more than 0.086°F error/ft.

[3] Dual channel applications require either two thermocouple sensors or two identical RTD sensor types.

[4] For mating connector information, see Ordering Information Accessory section.

[5] Certified for thermometer accuracy (oven and hot food holding applications from 32°F to 60°F) when used with RTD or type J thermocouple probes.

Ordering Information

(1033)

F 2 H A - _ _ 1 - _ AA

MiniChef™ 2000

Cooking controller with numerous food equipment application software sets, single and dual channel on/off or PID temperature regulation, timer and machine-function control, microprocessor-based, programmable, auto-tuning, WatCurve™, WatHelp diagnostics, 24V~ (ac) power input, agency approved, flush mounted (membrane faceplate supplied by customer).

Inputs

1 = Dual thermocouple, Type J, K or E
2 = Dual RTD, platinum, 100Ω, curve selectable
3 = Dual RTD, platinum, 500Ω, curve selectable
4 = Dual RTD, platinum, 1000Ω, curve selectable

Note: All models include two event inputs, switched dc logic signal, non-isolated.

Output Number 1

1 = Switched dc, 5V nominal, 30mA, non-isolated
2 = Solid-state relay, Form A, 0.4A, without RC suppression
3 = Solid-state relay, Form A, 0.4A, with RC suppression

Output Number 2

1 = Switched dc, 5V nominal, 30mA, non-isolated
2 = Solid-state relay, Form A, 0.4A, without RC suppression
3 = Solid-state relay, Form A, 0.4A, with RC suppression

Event Outputs 1 and 2

1 = 2 event outputs, switched dc, 5V nominal, 30mA, non-isolated

Battery and Real-time Clock

0 = None
1 = Includes battery and real-time clock

Audible Alarm

0 = Alarm signal available at connector, switched dc, 5V nominal, 30mA, non-isolated
1 = Internal alarm included

Software

AA = Standard Food Equipment Application Software Set
XX = Custom Set-up parameters or Made-To-Order custom software. Consult your local Watlow Sales Engineer. Code number assigned by factory.

NOTES

Declaration of Conformity

CE 97

WATLOW CONTROLS
1241 Bundy Boulevard
Winona, Minnesota 55987 USA

MINICHEF 2000

English

Declares that the following product:

Designation:	MINICHEF 2000
Model Number(s):	F2(H or U)(A or C)-(1, 2, 3 or 4)(1, 2 or 3)(1, 2 or 3) 1-(0 or 1)(0 or 1)(Any two letters or numbers)
Classification:	Electronic incorporated Class III temperature controller, Type 2C action, for use in light industrial
RatedVoltage:	24V~ (VAC)
Rated Frequency:	50/60 Hz
Maximum Input Power:	15 Watts

Meets the essential requirements of the following European Union Directive(s) using the relevant section(s) of the normalized standards and related documents shown:

89/336/EEC Electromagnetic Compatibility Directive

EN 50082-1:	**1995**	**EMC Generic immunity standard, Part 1: Residential, commercial and light industry**
EN 61000-4-2:	1995	Electrostatic discharge
EN 61000-4-4:	1995	Electrical fast transients
EN 61000-4-5:	1995	Surge immunity
EN 61000-4-6:	1996	Conducted immunity
EN 61000-4-8:	1993	Power frequency magnetic field immunity
EN 61000-4-11:	1994	Voltage dips, short interruptions and voltage variations immunity
ENV 50140:	1994	Radiated immunity
ENV 50204:	1995	Cellular phone
EN 50081-1:	**1994**	**EMC Generic emission standard, Part 1: Residential, commercial and light industry**
EN 55011:	1991	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical radio-frequency equipment (Class B)

73/23/EEC Low-Voltage Directive

EN 60730-1:	**1993**	**Automatic electrical controls for household and similar use, Part 1: General requirements**
EN 60730-2-9:	1995	Automatic electrical controls for household and similar use, Part 2: Particular requirementsSection 2.9 Temperature sensing controls

Déclare que le produit suivant :

Français

Désignation :	MINICHEF 2000
Numéro(s) de modèle(s) :	F2 (H ou U) (A ou C)-(1, 2, 3 ou 4) (1, 2 ou 3)(1, 2 ou 3) 1-(0 ou 1) (0 ou 1) (deux lettres ou chiffres quelconques)
Classification :	Contrôleur de température Classe III électronique, action type 2C, pour les utilisations industrielles légères
Tension nominale :	24 V ~ (alternatif)
Fréquence nominale :	50/60 Hz
Alimentation d'entrée maximale :	15 W

Conforme aux exigences de la (ou des) directive(s) suivante(s) de l'Union Européenne figurant aux sections correspondantes des normes et documents associés ci-dessous :

89/336/EEC Directive de compatibilité électromagnétique

EN 50082-1 :	**1995**	**Norme générique sur l'immunité, Partie 1 : Environnement résidentiel, commercial et industriel léger**
EN 61000-4-2 :	1995	Décharge électrostatique
EN 61000-4-4 :	1995	Transitoires rapides électriques
EN 61000-4-5 :	1995	Immunité aux surtensions
EN 61000-4-6 :	1996	Immunité conduite
EN 61000-4-8 :	1993	Immunité aux champs magnétiques de fréquence industrielle
EN 61000-4-11 :	1994	Immunité aux chutes de tension, brèves interruptions et variations de tension
ENV 50140 :	1994	Immunité rayonnée
ENV 50204 :	1995	Téléphone cellulaire
EN 50081-1 :	**1994**	**Norme générique sur les émissions, Partie 1 : Environnement résidentiel,commercial et industriel léger**
EN 55011 :	1991	Limites et méthodes de mesure des caractéristiques des perturbations radioélectriques des appareils industriels, scientifiques et médicaux (Classe B)

73/23EEC Directive sur les basses tensions

EN 60730-1 :	**1993**	**Commandes électriques automatiques à usage domestique et similaire, Partie 1: Exigences générales**
EN 60730-2-9 :	1995	Commandes électriques automatiques à usage domestique et similaire, Partie 2: Exigences particulières, Section 2.9 Commandes de détection de la température

Erklärt, daß das folgende Produkt:

Deutsch

Beschreibung:	MINICHEF 2000
Modellnummer(n):	F2 (H oder U)(A oder C)-(1, 2, 3 oder 4)(1, 2 oder 3)(1, 2 oder 3) 1-(0 oder 1)(0 oder 1)(2 beliebige Buchstaben oder Zahlen)
Klassifikation:	Eingebautes elektronisches Temperaturregelsystem der Klasse III, Typ 2C Aktion, für den Einsatz in der Leichtindustrieumwelt
Nennspannung:	24 V~ (V Wechselstrom)
Nennfrequenz:	50/60 Hz
Maximaler Leistungsverbrauch:	15 W

Erfüllt die wichtigsten Normen der folgenden Anweisung(en) der Europäischen Union unter Verwendung des wichtigsten Abschnitts bzw. der wichtigsten Abschnitte der normalisierten Spezifikationen und der untenstehenden einschlägigen Dokumente:

89/336/EEC EWG Elektromagnetische Verträglichkeit

EN 50082-2:	**1995**	**EMC-Rahmennorm für Störsicherheit, Teil 1: Wohngegenden, Handelsverkehr und Leichtindustrie**
EN 61000-4-2:	1995	Elektrostatische Entladung
EN 61000-4-4:	1995	Elektrische schnelle Stöße
EN 61000-4-5:	1995	Spannungsstoßimmunität
EN 61000-4-6:	1996	Störimmunität
EN 61000-4-8:	1993	Magnetische Felder
EN 61000-4-11:	1994	Immunität gegen Spannungsgefälle, kurze Unterbrechungen und Spannungsabweichungen
ENV 50140:	1994	Strahlungsimmunität
ENV 50204:	1995	Mobiltelefon
EN 50081-2:	**1994**	**EMC-Rahmennorm für Emissionen, Teil 1: Wohngegenden, Handelsverkehr und Leichtindustrie**
EN 55011:	1991	Beschränkungen und Methoden der Messung von Funkstörungsmerkmalen industrieller, wissenschaftlicher und medizinischer Hochfrequenzgeräte (Klasse B)

72/23/EEC EWG Niederspannungsrichtlinie

EN 60730-1:	**1993**	**Automatische elektrische Regelsysteme für den Haushalt und ähnlichen Einsatz, Teil 1: Allgemeine Richtlinien**
EN 60730-2-9:	1995	Automatische elektrische Regelsysteme für den Haushalt und ähnlichen Einsatz, Teil 2: Spezifische Richtlinien Abschnitt 2.9, Temperaturregelsysteme

Declara que el producto siguiente:

Español

Designación:	MINICHEF 2000
Números de modelo:	F2 (H o U)(A o C)-(1, 2, 3 ó 4)(1, 2 ó 3)(1, 2 ó 3) 1-(0 ó 1)(0 ó 1)(Cualquier combinación de dos letras o números)
Clasificación:	Control de temperatura electrónico incorporado, Clase III, acción tipo 2C, para uso en aplicaciones de industria ligera
Tensión nominal:	24 V ~ (Vca)
Frecuencia nominal:	50/60 Hz
Potencia de entrada máxima:	15 vatios

Cumple con los requisitos esenciales de las siguientes Directivas de la Unión Europea, usando las secciones pertinentes de las reglas normalizadas y los documentos relacionados que se muestran:

89/336/EEC - Directiva de Compatibilidad Electromagnética

EN 50082-1:	**1995**	**Norma de inmunidad genérica del EMC, Parte 1: Ambiente residencial, comercial e industria ligera**
EN 61000-4-2:	1995	Descarga electrostática
EN 61000-4-4:	1995	Perturbaciones transitorias eléctricas rápidas
EN 61000-4-5:	1995	Sobretensión
EN 61000-4-6:	1996	Inmunidad conducida
EN 61000-4-8:	1993	Campos magnéticos
EN 61000-4-11:	1994	Caídas de tensión, interrupciones breves y variaciones de tensión
ENV 50140:	1994	Inmunidad radiada
ENV 50204:	1995	Teléfono portátil
EN 50081-1:	**1994**	**Norma de emisión genérica del EMC, Parte 1: Ambiente residencial, comercial e industria ligera**
EN 55011:	1991	Límites y métodos de medición de características de perturbaciones de radio correspondientes a equipos de radiofrecuencia industriales, científicos y médicos (Clase B)

73/23/EEC Directiva de Baja Tensión

EN 60730-1:	**1993**	**Controles eléctricos automáticos para electrodomésticos y aparatos de uso similar, Parte 1: Requerimientos generales**
EN 60730-2-9:	1995	Controles eléctricos automáticos para electrodomésticos y aparatos de uso similar, Parte 2: Requerimientos particulares Sección 2.9, Controles para detección de temperatura

Erwin D. Lowell
Name of Authorized Representative

Winona, Minnesota, USA
Place of Issue

General Manager
Title of Authorized Representative

March, 1997
Date of Issue

Signature of Authorized Representative

Part Numbers & Accessories

MINICHEF 2000 Accessories

0836-0442-0000	Sensor Input Mating Connector, (RIACON #31007106), 6-position, quick-connect terminal, screw connection for 28-14 AWG wires, tighten to 7 in/lb
A001-0298-0000	Power Supply and I/O Mating Connector Kit. Includes: – 1 AMP #1-640523-0, 15-position, quick-connect terminal – 15 AMP #641300-1 crimp pins
0238-0679-0000	Prototyping & Training Membrane Overlay, adhesive-backed, 4.75 in x 4.75 in
0830-0479-0000	Prototyping EPROM Extraction Tool, AMP #821980-1
A001-0249-0001	120V~ to 24V~ (ac), stepdown transformer, class 2, quick-connect terminals included
A001-0249-0002	208/240V~ to 24V~ (ac), step-down transformer, class 2, quick-connect terminals included

MINICHEF 2000 Documentation

WMC2-XUGN-0000	The Complete MINICHEF 2000 User Guide
WMC2-XADN-0000	The Complete MINICHEF 2000 User Guide on CD
WMC2-XTDN-0000	MINICHEF 2000 Tutorial Disk
WMC2-XSGN-0000	Hardware & Software Setup Guide
WMC2-XAGN-0001	Cook-&-Hold Oven Application Guide
WMC2-XAGN-0002	Convection Oven Application Guide
WMC2-XAGN-0003	Deepfat Fryer Application Guide
WMC2-XAGN-0004	Griddle Application Guide
WMC2-XAGN-0005	Timer Application Guide
WMC2-XAGN-0006	Shelf Timer Application Guide
WMC2-XAGN-0007	Rotisserie Oven Application Guide

Recommended Sources of Supply for Miscellaneous Items

DURA-TECH, Inc.
LaCrosse, WI
(608) 781-2570

- *Custom Membrane Faceplates*

AMP, Inc.
Harrisburg, PA
1-800-522-6752

- *Prototyping EPROM Extraction Tool* Part No. 821980-1
- *Pin Crimping Hand Tools* Part No. 90325-1 or 58514-1
- *Pin Extraction Hand Tool* Part No. 455822-2

RIA Electronic, Inc.
Eatontown, NJ
(908) 389-1300

- *RIACON Connectors*